

Serial No. 09/841,380Docket No. 56433US002**Pending Claims**

No claim amendments are being submitted at this time. Claims 33 – 59 are pending in this application. For the convenience of the Examiner, a fresh unmarked copy of all the claims is shown below.

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1. (Withdrawn) A method for forming a liquid coating on a substrate comprising electrostatically spraying drops of the liquid onto a liquid-wetted target region of a conductive transfer surface, and transferring a portion of the thus-applied liquid from the transfer surface to the substrate to form a wet coating.
 2. (Withdrawn) A method according to claim 1 wherein the transfer surface circulates.
 3. (Withdrawn) A method according to claim 2 wherein the transfer surface comprises a drum.
 4. (Withdrawn) A method according to claim 3 wherein the drum is grounded.
 5. (Withdrawn) A method according to claim 2 wherein the transfer surface comprises a belt.
 6. (Withdrawn) A method according to claim 1 wherein one or more nip rolls force the substrate against the transfer surface, thereby spreading the applied drops on the transfer surface and decreasing the time required for the drops to coalesce into the coating.
 7. (Withdrawn) A method according to claim 6 wherein the nip roll causes the coating to have visually improved uniformity.
 8. (Withdrawn) A method according to claim 1 wherein the wet coating is contacted by two or more pick-and-place devices that improve the uniformity of the coating.
 9. (Withdrawn) A method according to claim 8 wherein at least one of the pick-and-place devices comprises a roll.

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10. (Withdrawn) A method according to claim 9 comprising three or more pick-and-place rolls.
11. (Withdrawn) A method according to claim 10 wherein three or more of the rolls have different diameters.
12. (Withdrawn) A method according to claim 11 wherein at least one of the rolls is undriven.
13. (Withdrawn) A method according to claim 11 wherein all of the rolls are undriven.
14. (Withdrawn) A method according to claim 1 wherein the transfer surface comprises a rotating endless belt contacted by two or more pick-and-place devices that improve the uniformity of the coating.
15. (Withdrawn) A method according to claim 1 wherein the substrate comprises an insulative substrate.
16. (Withdrawn) A method according to claim 15 wherein the substrate is coated without pre-charging the substrate.
17. (Withdrawn) A method according to claim 1 wherein the substrate comprises paper, plastic, rubber, glass, ceramic, metal, biologically derived material, or a combination or composite thereof.
18. (Withdrawn) A method according to claim 17 wherein the substrate comprises a polyolefin, polyimide or polyester.
19. (Withdrawn) A method according to claim 1 wherein the wet coating is transferred from the conductive transfer surface to a second transfer surface and thence to the substrate.
20. (Withdrawn) A method according to claim 1 wherein the substrate comprises a porous substrate.

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21. (Withdrawn) A method according to claim 1 wherein the substrate comprises a woven or nonwoven web.
22. (Withdrawn) A method according to claim 1 wherein the substrate is coated without substantial penetration of the coating through the substrate.
23. (Withdrawn) A method according to claim 1 wherein the substrate comprises an electronic film, component or precursor thereof.
24. (Withdrawn) A method according to claim 1 wherein the wet coating is dried, cured or otherwise hardened and has a final caliper.
25. (Withdrawn) A method according to claim 1 wherein the drops have an average diameter that is greater than the caliper and the coating is substantially void-free.
26. (Withdrawn) A method according to claim 1 wherein the caliper is less than about 10 micrometers.
27. (Withdrawn) A method according to claim 1 wherein the caliper is less than about 1 micrometer.
28. (Withdrawn) A method according to claim 1 wherein the caliper is less than about 0.1 micrometer.
29. (Withdrawn) A method according to claim 1 wherein the caliper is greater than about 10 micrometers.
30. (Withdrawn) A method according to claim 1 wherein the caliper is greater than about 100 micrometers.
31. (Withdrawn) A method according to claim 1 wherein the drops are neutralized on the transfer surface before being transferred to the substrate.
32. (Withdrawn) A method according to claim 1 wherein the coating is applied in one or more stripes that wholly or partially overlap, that abut one another, or that are separated by uncoated substrate.

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33. (Previously presented) An apparatus comprising a liquid coating composition, a circulating conductive transfer surface that when wet with the liquid coating composition transfers a portion of the liquid coating composition to a substrate, and an electrostatic spray head that applies drops of the liquid coating composition onto a target region of the conductive transfer surface, wherein following startup of the apparatus and one or more circulations of the conductive transfer surface, the target region has a continuous coating of the liquid coating composition before newly applied drops land.

34. (Previously presented) An apparatus according to claim 33 wherein the substrate has a direction of motion and the transfer surface circulates in the direction of motion.

35. (Original) An apparatus according to claim 34 wherein the transfer surface comprises a drum.

36. (Original) An apparatus according to claim 34 wherein the transfer surface comprises a belt.

37. (Original) An apparatus according to claim 33 wherein the transfer surface is grounded.

38. (Previously presented) An apparatus according to claim 33 wherein the electrostatic spray head produces a line of charged droplets.

39. (Previously presented) An apparatus according to claim 33 wherein the electrostatic spray head comprises a plurality of ~~such~~ electrostatic spray heads that apply one or more coating compositions to the conductive transfer surface in one or more lanes.

40. (Previously presented) An apparatus according to claim 39 wherein the plurality of spray heads applies a plurality of coating compositions to one lane.

41. (Previously presented) An apparatus according to claim 39 wherein the plurality of spray heads applies coating compositions to a plurality of lanes.

42. (Original) An apparatus according to claim 33 comprising a plurality of circulating conductive transfer surfaces.

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43. (Original) An apparatus according to claim 33 further comprising one or more nip rolls that force the substrate against the conductive transfer surface.

44. (Previously presented) An apparatus according to claim 33 further comprising two or more pick-and-place devices that can periodically contact and re-contact the wet coating at different positions on the substrate, wherein the devices have periods that improve the uniformity of a coating on the substrate compared to a coating made without such devices.

45. (Original) An apparatus according to claim 44 wherein at least one of the pick-and-place devices comprises a roll.

46. (Original) An apparatus according to claim 45 comprising three or more pick-and-place rolls.

47. (Original) An apparatus according to claim 46 wherein three or more of the rolls have different diameters.

48. (Original) An apparatus according to claim 46 wherein at least one of the rolls is undriven.

49. (Original) An apparatus according to claim 46 wherein all of the rolls are undriven.

50. (Previously presented) An apparatus according to claim 46 further comprising the substrate, wherein the substrate comprises a rotating endless belt or moving web, and the rolls rotate with the belt or web.

51. (Previously presented) An apparatus according to claim 33 further comprising the substrate, wherein the substrate comprises an insulative substrate.

52. (Previously presented) An apparatus according to claim 51 further comprising the substrate, wherein the substrate comprises plastic.

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53. (Original) An apparatus according to claim 33 wherein the coating is transferred from the conductive transfer surface to a second transfer surface and thence to the substrate.

54. (Previously presented) An apparatus according to claim 33 further comprising the substrate, wherein the substrate comprises a porous substrate.

55. (Previously presented) An apparatus according to claim 54 further comprising the substrate, wherein the substrate is coated without substantial penetration of the coating through the substrate.

56. (Previously presented) An apparatus according to claim 33 further comprising the substrate, wherein the substrate comprises a woven or nonwoven web.

57. (Previously presented) An apparatus according to claim 33 further comprising the substrate, wherein the substrate comprises an electronic film, component or electronic component precursor.

58. (Original) An apparatus according to claim 33 wherein the conductive transfer surface is grounded and substantially none of the charges generated by the electrostatic spraying device are transferred to the substrate.

59. (Original) An apparatus according to claim 33 wherein the spray head produces drops having an average drop diameter, the transfer surface transfers a coating having an average caliper to the substrate, the average caliper is less than the average drop diameter, and the transferred coating is substantially void-free.

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Conclusion

Applicants request reconsideration and withdrawal of the rejections and passage of this application to the issue branch.

Respectfully submitted on behalf of
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October 2, 2003

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